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SCHOOL AND SOCIETY

Volume XX SATURDAY, SEPTEMBER 13, 1924 Number 507

WHAT THE SMITHSONIAN INSTITUTION IS DOING FOR PUBLIC EDUCATION[1]

WHEN invited to speak on the educational features of the Smithsonian I regarded the opportunity so important and esteemed the honor so highly that I immediately wrote out what I had to say; but my enthusiasm was somewhat lessened on receiving a notice that my talk would be one of a series of speeches by men more able than myself, on the subject, "What the government is doing for public education." This somewhat dampened my enthusiasm as a certain feeling began to creep over me that my remarks might not be entirely apropos of the subject. I feel that I ought, therefore, in justice to my listeners, to call your attention to the fact that the Smithsonian Institution is not an educational institution in the general use of the term, although it is an efficient aid to true educational institutions. No body of professors, lecturers or teachers is connected with the Smithsonian, but the work of the men and women connected with it furnishes material to institutions, colleges, universities and the like, which they can adapt for educational purposes. Somewhat the same relationship exists between the work of the Smithsonian and public education that we find between a scientific man, the discoverer of scientific laws, and the inventor who practically applies these laws to the general welfare of mankind. In this sense the Smithsonian Institution may be designated a parent or older brother of many scientific institutions of the federal government devoted to the service of national education. Its prolific sphere of influence embraces not only the United States but also the scientific progress of America and the civilized world in the 19th century. There is hardly a branch of scientific inquiry in which the Smithsonian is not preeminent in the service it has rendered to education. It has not only diffused knowledge by publication but also created it through research and exploration. But creation of knowledge is only a half of its honorable history. No federal institution has done more than the Smithsonian to encourage research.

Among these various sciences that contribute their service to education may be mentioned anthropology, geology, biology and astrophysics. In knowledge of the American Indians, their languages, sociology, arts and industries, the services of the Smithsonian are *facile princeps*. The Bureau of Ethnology is also preserving, by publication, a priceless record of the noble race that once peopled America. If character is the foundation of human nobility, no research work is more commendable than that which leads to a correct appreciation of the character of the American Indian. We can not estimate in material standards how much this is worth to the intellectual life of our country.

By an international exchange of publications the Smithsonian has been foremost in the facilitation of transportation of scientific publications between America and the rest of the world. This institution of many valuable functions has also among its activities a prominent place in the International Catalog of Scientific Literature.

The Smithsonian holds this honorable place in scientific achievement through the adoption for its motto of an ideal, once novel, now universal, and always commendable. Let us consider the ideal of scientific

[1] Presented at the meeting of the Educational Press Association of America, July 2, 1924.

education that has made the Smithsonian great during its existence.

The year 1846 witnessed in America the birth of an institution dedicated to an ideal which quickened the development of scientific research in America I refer, of course, to the Smithsonian Institution, the ideal of which is the increase and diffusion of knowledge among men. It is not too much to say that this event has been so fruitful in education that this country owes a greater debt of gratitude to it than to any other institution. Two things have made this ideal a reality: the original gift of an Englishman, James Smithson, a scientific man, graduate of Oxford and member of the Royal Society of England, and the fostering care and support of the government for the bureaus which have grown up around the institution, following the ideal of Smithson as interpreted by Professor Joseph Henry, the first secretary of the institution. For a proof of the estimation in which Henry is now held one need only to point to the Hall of Fame where the sculptured memorials of our great are installed.

Let us glance back seventy-eight years to the date of the birth of the Smithsonian Institution. The first meeting of the regents was held on September 7, 1846, when Professor Henry, already known for his great discoveries in physics, was elected secretary. At this time there occurred events that marked an important progress in the extension of the original states of the Union. Previously most of the country west of the Mississippi River was practically unknown or at all events unexplored. The discovery of gold in California a few years later changed all this and opened up a most extraordinary vision to the scientific men of the country. These explorations were seized upon by the officers of the Smithsonian as a great opportunity and made the bases of the great National Museum and Bureau of American Ethnology. In the same year there appeared the first publication of the Smithsonian Institution, the first of a long series that has continued unabated up to the present day.

The institution was particularly fortunate in the election of Professor Henry as its first secretary. At the time he assumed the direction of the institution the condition of science and scientific methods was different from the present. His successors, Baird, Langley and Walcott, have practically followed the policy which he inaugurated, and the long line of scientific men who have labored within its walls for the advancement of knowledge have largely aided in bringing it about that America now stands in the front ranks of the world of science, respected wherever science is cultivated.

In 1846 our educational institutions, with few exceptions, gave very little attention to the natural history branches of knowledge, their curriculums being mainly classical. There were several learned societies, both at home and abroad, among which was the Royal Society of Great Britain. A few years after his graduation Smithson was elected a member of this venerable society. As far back as 1650 we find in the Royal Society essays on ethnology and archeology, long before anthropology had been recognized as a science. Smithson's election brought him a communion with the most scientific men of his generation. He was influenced greatly by them and the testimony of many of these is on record, in which Smithson's attainments are spoken of and justly appraised at a very high rate. The ideals of the Royal Society lived in him and he made it possible, through the Smithsonian Institution, to give a higher direction to science and education in America.

Standing as it does as the creator of new knowledge and as an aid to the teacher of the same, the function of distribution of publications has assumed a great rôle in the past and present history of the institution. With no expense, or practically a nominal

one, to the receivers, a flow of publications on all sciences has been directed to libraries, museums and educational institutions. These works are recognized as standard; most of them are now out of print, and several, as the *Handbook of American Indians*, have gone through several reprints and still the cry is for more. The estimation in which these works are held is best known to the official who distributes them, but it would take hours to consider it in an adequate way.

The Smithsonian workers to-day have the same enthusiasm for the quest of knowledge. But the institution has sounded the alarm; its endowments are not adequate to adapt itself to new conditions. It holds the torch aloft but is compelled to ask for means to nourish the flame.

J. WALTER FEWKES
THE SMITHSONIAN INSTITUTION

CONTRIBUTIONS OF THE LIBRARY OF CONGRESS TO EDUCATION[1]

I HAVE been asked to talk about the Library of Congress as a contributor to the cause of education. In a sense I might say that all its activities are educational; for, unlike great city libraries, it does not undertake to supply light reading for the surrounding community. Washington has a city library which, among other activities, supplies its immediate needs for literary diversion. Yet I do not mean to say that there is no circulation of fiction and non-educational works. The Library of Congress is the national library, but by title and in fact it is also the Library of Congress, with a duty to its members, and it must supply their needs not only in the way of aid for the understanding of subjects connected with legislation, for which indeed there is a complete legislative reference division, but also it undertakes to meet their recreational needs, as by the supply of fiction.

The Library of Congress as the national library is essentially an educational institution. Its mission is to aid in enlarging the boundaries of knowledge and amplifying present knowledge. Libraries as educational factors have long been recognized.

In 1876 this received official recognition in the report on the libraries of the United States, prepared by the Commissioner of Education, who wrote that the influence of the librarian as an educator was rarely estimated by outside observers and seldom fully realized by himself. That educators should be able to know the direction and gauge the extent and results of this potential influence and that librarians should realize their high privileges and responsibilities as teachers he considered matters of great import to the interests of public education. Since that was written librarians have become more conscious of their influence on education and have realized the obligations of their mission. The Library of Congress has been keenly sensible of such obligations and its administration has labored constantly to satisfy them.

Let us first consider its immediate sphere of influence; to borrow a political phrase of pre-war days, that is, its help to those who can make personal use of its facilities. An effective library service is educational service in so far as it tends to add to the knowledge of the individuals making use of books already in being. Research and reference libraries, in that they are constantly used by the makers of books, render a *special* educational service in aid of scholarship which tends to add to the sum total of human knowledge. Such special service in the advancement of knowledge the Library of Congress is performing to a notable degree.

There is no great university library in Washington, resembling the great collec-

[1] Presented at the meeting of the Educational Press Association of America.

tions at Harvard, Princeton, Yale, Brown, Columbia, etc. In default of such the Library of Congress, with its three million volumes, undertakes to meet the research needs of the universities and colleges of this city. So that its service to education in the capital of the nation is potent, in fact, indispensable. The faculties and students of the capital's institutions of learning consult and draw upon the library's collections; without these their activities would be greatly inconvenienced.

And now a few words as to those who come to Washington primarily to make use of the library's collections for research. Authors of high repute as producers of informative literature, younger writers of promise, professors and instructors in the higher institutions of learning, graduate candidates for higher degrees, are coming here in numbers, not merely because they find here indispensable material not elsewhere available, but because they are freely accorded exceptional facilities for research.

We will, for a moment, consider the qualifications and properties of the Library of Congress which enable it to be a great factor in education. Under the copyright law it has received, since 1846, every book copyrighted in the United States. In this way, and through the purchase of foreign and earlier imprints, it has assembled 3,089,341 volumes, 174,093 maps, 972,130 volumes and pieces of music, 436,892 prints (engravings)—a collection which is especially strong in books on American history, economics and political science. Under an agreement made with the Smithsonian Institution in 1866, its library, consisting largely of transactions of learned societies, is deposited with the Library of Congress.

The library functions through sixteen divisions: The mail and delivery (6 persons); accessions (14 persons); catalogue (70 persons); classification (20 persons); card (50 persons); bibliography (7 persons); reading room (66 persons); periodicals (12 persons); documents (7 persons); documents manuscripts (4 persons); maps (6 persons); music (7 persons); prints (5 persons); law library (8 persons); Semitic, Slavic and Oriental literature (5 persons); legislative reference (variable number of persons); printing office and bindery, and copyright office (91 persons). We shall consider those only which directly aid the forces of education.

The manuscript collection available for the use of scholars coming to the library comprises the source material of American history, consisting almost wholly of the papers of American public men and of the federal government, and comprises millions of letters and documents. It is being constantly increased by gift, purchase and transfer of papers from the various departments of the government. Copyists are employed in the archives of London, Paris, Madrid and elsewhere in Europe to make transcripts of all important manuscript records relating to the early history of America that are preserved in those archives. In a special reading room for the consultation of manuscripts there is a card index to the entire manuscript collection.

As to the library's aid in facilitating the use of its treasures: research workers, authors, scholars, specialists are given the exclusive use of reserved study tables, and if one requires the aid of a stenographer, secretary or typist, he is provided with a quiet alcove or other secluded place where dictation and typing will not disturb others. There the required books can be assembled and held for reasonable periods. Within the year about 160 persons have enjoyed these special facilities for research, including twenty-five authors whose published writings form 370 titles in our catalogue.

During the past year instructors or students from 43 institutions of learning have registered with the division of manuscripts for research work. Five came from Harvard, and four each from the University of

Chicago, the University of Pennsylvania, Columbia, Yale and Park College. South Dakota, Texas, Washington, California and England were represented. All these persons were engaged in research work among the fundamental sources of American history, and in the case of many of them the results of their studies will be published. An average of ten books are in preparation at one time in that division.

Dr. James Truslow Adams, author of "The Founding of New England," to which was awarded the Pulitzer prize of $2,000 for the most notable contribution in the field of American history made in the year of its publication, says in the preface of his later work, "Revolutionary England":

> It is a pleasure to record my sincere appreciation of the many courtesies received in the course of preparing this volume from Dr. Herbert Putnam . . . and from the other members of the staff of that institution, without the ample facilities of which I could not have prepared this work. In particular I have to note the annually increasing number of transcripts from the British documents in the library's manuscript division, which are becoming every year of more vital importance to American scholars unable to examine the originals in London.

Among other writers who have made use of the division of manuscripts, with the subjects of their books, are the following: John Bach McMaster, "History of the People of the United States"; Edward Channing, "History of the United States"; Joseph Bucklin Bishop, "Theodore Roosevelt and His Time, as Shown in His Own Letters"; John Spencer Bassett, "Correspondence of Andrew Jackson"; Justin H. Smith, "History of the Mexican War"; Robert McElroy, "Grover Cleveland—the Man and the Statesman"; Carl Russell Fish, "Civil War and Reconstruction"; Samuel Flagg Bemis, "Diplomatic History of the United States"; H. Barrett Learned, "Life of William L. Marcy"; George Henry Haynes, "United States Government"; Mr. and Mrs. Frank W. Hutchins, "Work on the City of Washington"; Rev. William E. Barton, "Life of Lincoln"; Frederick J. Manning, "Work in British Archives"; R. C. McGrane, "Nicholas Biddle"; Sir Patrick McGrath (Newfoundland), "Boundary Dispute with Canada"; William Smith, Esq., I.S.O. (Public Archives of Canada, Ottawa), "History of the Post Office in British North America, 1639–1870"; G. Chinard, "Thomas Jefferson and France"; Fairfax Harrison, "The Fairfax Family in Virginia"; W. F. Dunaway, "James River and the Kanawha Canal"; Mrs. Washington E. Connor, "Chronicles of East Florida" (in press); Emerson Hough, "John Randolph of Roanoke" (which he did not live to finish).

Other works which have achieved national repute were compiled largely from sources in the Library of Congress, viz.: Beveridge's "Life of John Marshall" and Hyde's "International Law Chiefly Interpreted and Applied by the United States." The former was produced in close communication with the library and the latter was produced within its walls, in constant consultation with library officials.

Besides being the repository of the source material of American history, the division of manuscripts cooperates with the Modern Language Association in reproducing and making available to teachers and scholars the rarest books and manuscripts significant in the origins of English literature.

The documents division acquires, arranges and makes available for use the publications of governments, local as well as national, and of quasi-public bodies such as commercial organizations, international congresses and the like. This collection is in constant use by members of colleges, faculties and graduate students. Latin American documents, for example, have proved very useful to a University of Chicago professor in the preparation of courses in the history of South America.

Inquirers whose subjects as submitted by them involve research too elaborate for the attention of the reading room staff are referred to the division of bibliography. This division thus comes to serve as a central bureau of counsel and information on questions involving printed sources.

But mention of the division of bibliography leads me to speak of the wider influence of the library, of the avenues through which its service to scholarship is extended to those who can not come to Washington for study.

These avenues are its correspondence, its publications, inter-library loans and the distribution of the printed catalogue cards.

Research and reference work, with regard to printed sources, is essentially the work of the division of bibliography. Work of this kind naturally is auxiliary to the forces that make for education. It should be understood, however, that inquiries upon topics which are technically educational are not ordinarily dealt with by the division, but are referred to the bureau of education. The division is constantly engaged in the preparation of bibliographical memoranda, bibliographies and reference lists—printed, mimeographed or typewritten. It may be of interest to note a few typical questions that have had attention in the division: Anglo-Saxon interests, arbitration of industrial disputes, banks and banking, boycotts, budgets, cabinets of England and America, capital punishment, child labor, Chinese immigration, colonization, commission government for cities, conservation of natural resources—and so on. These are titles of some of the lists that have been printed and distributed to libraries throughout the country, or made available to individuals through purchase from the superintendent of documents.

In mimeographed form the division has issued lists of references on immigration legislation, relation of government and business, codification of international law, international courts, with special reference to the Permanent Court of International Justice, soldiers' bonus, unemployment insurance, the lumber industry, cancellation of the allied war debt, the steel industry, mandates, etc. It will be noticed that subjects in political science and political economy occur frequently. That is because lists on such subjects are prepared in the discharge of a primary service to congress. The typewritten lists, usually prepared in reply to inquiries from the general public, exhibit a wider range of subjects. From time to time these are revised, and brought down to date, and reissued in mimeographed form. Both mimeographed and typewritten lists are noted in the bulletin of the Public Affairs Information Service. Copies of the typewritten lists may be had for the cost of copying by application to that service. The mimeographed lists are furnished to local libraries.

While it is, of course, the privilege and duty of the local library to furnish whatever information it can and the function of the national library to furnish it only when the local library is unable to do so, the library, within the limits necessarily imposed, gives freely of its aid in the furtherance of all serious work.

The division of manuscripts published a descriptive handbook of its collections in 1918 and all important accessions are noted each year in the librarian's report. Calendars have been published of the Franklin papers, the John Paul Jones manuscripts, the papers of James Monroe, the naval records of the American Revolution, Washington correspondence and Washington manuscripts, Van Buren papers and the Crittenden papers.

Since 1910 the documents division has issued a monthly check list of state publications, which gives information, noting the contents, of the official publications of the states of the Union. Subscribers to this list include about five hundred educational institutional libraries.

Under its system of inter-library loans

the Library of Congress lends to libraries in other localities unusual books (not to be found nearer at hand) for the use of productive writers and others whose work seems likely to extend the boundaries of knowledge. Such loans are not confined to the United States. Books are occasionally sent out of the country. For instance, recent appeals from Hawaii have been granted. Of course it is understood that these loans are not made indiscriminately. Books that should be found nearer home, books easily obtainable in the market, books that can not be spared without inconvenience to local readers, books wanted merely for self-instruction, are not sent out. Nor does the library undertake to supply the total lack of library facilities. An appeal in behalf of a gentleman who planned "an exhaustive work on the archeology of Wales," but had established himself in a remote town in the Northwest, could not be granted. Within carefully restricted limits, however, the Library of Congress sends out each year thousands of volumes to hundreds of American libraries for the use of productive scholars.

Although not perhaps directly engaged in the diffusion of information to the public, the catalogue division is necessarily fundamentally important for this service. For it is only as the results of its work appear in the printed cards filed in the reading room catalogue, or sold to libraries throughout the country, that the printed treasures of the library can become available. The present system of cataloguing is designed to bring out the contents of the library in the most intelligible and exhaustive manner. The catalogue rules are the results of intelligent study, experiment and experience of the past. The basic rules were laid down by Sir Anthony Panizzi, of the British Museum, and are familiarly known as the ninety-one rules. These were adapted and developed, to keep pace with the progress of letters, by Jewett and Cutter and later by the librarians of the American Library Association with the cooperation of the Library of Congress.

Scientific classification is a basic requisite in library usefulness. Until 1900 the Library of Congress used the Jeffersonian system (with modifications). The reclassification, proceeding from 1900, has been nearly completed. In the new system the letters of the alphabet, omitting only I, O, W, X and Y denote the main groups:

A includes general work, indexes, newspapers, periodicals and books on the general history of knowledge and learning;
B is for philosophy and religion;
C for history and auxiliary sciences;
D for history and topography other than American;
E and F for American history (F represents United States local history and America outside the U. S.);
G for geography and anthropology;
H, J and K cover the related subjects of sociology, political science and law;
L comprises books on education, subdivided into general works, the history of education, the theory and practice of education—educational psychology—teaching; special forms, relations and applications; universities and colleges, further subdivided geographically; university, college and school magazines; college fraternities and their publications; text-books;
M, N and P are for music, art and literature, respectively, while the remaining letters are used for branches of pure and applied science.

The card division by furnishing printed cards to the libraries of over 1,000 educational institutions enables them to compile accurate and adequate catalogues much more economically than they otherwise could. In addition, many cards are supplied to educational institutions and educators for bibliographical purposes. Complete sets of cards published are on deposit in over forty of the principal library centers of the country, enabling students to de-

termine whether a book is in the Library of Congress. The total number of different cards now in stock is about 930,000; the number of new cards printed this fiscal year will be close to 30,000.

In concluding I would say a word of the more personal side of the service. To quote Charles Eliot Norton in a report on the operations of the American Institute of Archeology the finest things can not be tabulated. The spirit and devotion can not be tabulated but may be felt and not exploited. As D'Alembert wrote of men of letters "the art of instructing and enlightening men" is "often the too rare art of good government, the noblest portion and gift in human reach." In this, the gift of the educator, the librarian may feel that he is an important factor.

In lighter vein a word as to librarians: William Lyon Phelps, in his fascinating comments on literature and men, quotes a daily visitor to libraries about librarians:

> After all, a librarian is sure to be a good man. No librarian ever killed a man, or robbed a church, or stole an automobile. No one of them was ever suspected of a violent crime. They move gently; they don't bump into you; they don't slam doors. They are never offensively profane. No one has ever found a librarian leading or even taking part in lynching.

APPLETON P. C. GRIFFIN
CHIEF ASSISTANT LIBRARIAN OF CONGRESS

THE BUREAU OF STANDARDS AS AN EDUCATIONAL INSTITUTION[1]

PEOPLE passing the bureau's group of buildings sometimes ask "What university is that?" And their arrangement and type does suggest a university campus on a hill. But the resemblance of the bureau to a seat of learning is much more than in the outward appearance. We have no faculty, but the scientific staff of over five hundred functions in a somewhat similar way to the faculty of a graduate school devoted largely to research in the physical sciences and their applications. The younger members of the staff, most of them college graduates, correspond to the graduate students of our universities, for many of these young men and women are undertaking their first serious search for new knowledge either alone or in association with their seniors.

In his interesting book "South America," the late James Bryce makes the statement (page 344): "The world is to-day ruled by physical science and by business which, in the vast proportions industry and commerce have now attained, is itself the child of physical science." An educational system designed to teach men to live in a world without standards of length, mass and time is unthinkable. The yard and meter, the pound and kilogram, and the second are all quantities for which the Bureau of Standards feels its responsibility. It must not only keep these standards sufficiently uniform throughout the country by research and testing, education and law, for the ordinary purposes of commerce, but must meet the ever increasing needs of other institutions engaged in research and education.

The Organic Act creating the Bureau of Standards in 1901 charges it with the responsibility of maintaining standards and carrying out investigations in the properties of matter necessary in the development and maintenance of standards:

> That the functions of the bureau shall consist in the custody of the standards; the comparison of the standards used in scientific investigations, engineering, manufacturing, commerce and educational institutions with the standards adopted or recognized by the government; the construction, when necessary, of standards, their multiples and subdivisions; the testing and calibration of standard measuring apparatus; the solution of problems which arise in connection with standards; the determination of physical constants and the prop-

[1] Presented at the meeting of the Educational Press Association of America, July 2, 1924.

erties of materials, when such data are of great importance to scientific or manufacturing interests and are not to be obtained of sufficient accuracy elsewhere.

The higher educational work in science in all the educational institutions, as well as the research and development work in the industries, is dependent upon knowledge concerning properties of matter. The temperature scale from absolute zero to the highest temperatures in the stellar universe is of fundamental importance to the thinking in science of physics, chemistry, astronomy and even biology. The maintenance of this temperature scale and its application is of the utmost importance. Likewise, the thermal constants involved in changes in matter is most useful, not only in the theoretical studies in chemistry, physics and biology, but also in engineering. It is fundamental to developments in power devices and in refrigeration.

In the electrical field there stand out first of all the units of current, resistance, voltage and power. Not quite so directly the relationships involved in illumination, radio frequency and safety in use of electricity; all of these require researches of the most difficult character and continued development of equipment, apparatus and most important of all, men. In the field of optics this bureau is perhaps at the forefront. The wave lengths of light which are involved in studies on the structure of matter and the nature of the stellar universe are being studied by perhaps the ablest group in the world. Another group in this field is making most effective studies on the structure of matter with the study of ionization potentials, X-rays and radium.

In the field of chemistry the Bureau of Standards is well known. It assists chemists everywhere in methods of quantitative analysis, in the production and use of standard samples of materials, and in the production and isolation of pure materials. The purest platinum, which was first made at the bureau, is of great importance particularly in connection with chemical and pyrometric work.

In the field of machines and of the commodities of commerce the developments are interesting both theoretically and practically. The researches on metals, on their working, in testing machines and under the microscope all add to our knowledge of the world about us. Likewise the researches in rubber, leather and cement, stone and glass, are of use to both educational and manufacturing institutions.

I have given only a few illustrations of the bureau's work which show its interlocking with educational work. After all, the educational evaluation must be measured in terms of educated men who have been affiliated with the bureau. There have been some six hundred college graduates who have entered the Bureau of Standards and later left for other work. On the average these men remained at the bureau for two and one half years for what we would like to term a graduate course of training. There were, of course, among these men many who found themselves in the wrong place but probably one half of this number left the bureau because of special opportunities open to them with anywhere from fifty to five hundred per cent. increases in salary. The employees of the Bureau of Standards have two special attributes; first a man with the bureau's stamp on him has standing in somewhat the same way that a man with a college degree has standing; and second, the special training that a man receives at the bureau in addition to his general university training frequently places him in an outstanding position. In other words, we might boast of being a unique graduate school in which some six hundred men are postgraduates. In fact a great many college graduates come to the Bureau of Standards to work at a much lower salary than they might otherwise receive with the avowed purpose of fitting

themselves for more responsible positions elsewhere.

With regard to the college graduates who have come to the Bureau of Standards and who have remained I would say that in general these have been the ones who have found themselves suited to the work and happy in it. At present we have some three hundred and thirty employees who have come to us either as college graduates or who have finished their college work while engaged here. Of this number sixty have the Ph.D. degree. Twenty-four men have obtained the doctor's degree while working at the bureau and a much larger number have received other advanced degrees. Among these men the average entrance salary has been close to $1,500 per annum. They have been with the bureau on the average of four and seven tenths years each, and their average salary at present is approximately $2,400. Almost all these individuals have had many opportunities to leave the bureau at large increases in salary. They have felt the spirit of the institution and have been conscious of the part they are playing. Aside from this many of them keenly appreciate the variety of educational opportunities that the national capital offers.

In connection with the training of its employees the bureau, in 1908, initiated educational courses of graduate grade in mathematics, physics and chemistry, including such subjects as advanced calculus, spherical harmonics, physical chemistry, colloidal chemistry and thermodynamics. The work of these courses is accepted for degrees in the best universities. The research work done here is accepted toward the fulfillment of the thesis requirement of the doctorate. This work has continued every year since its foundation and is supported by moderate fees from those following the courses. The classes, usually three or four per year, range in size from ten to fifty students. The instructing staff is drawn from both within and without the bureau.

This program of graduate studies is administered by a small committee half of whom are elected by the student body and half appointed by the director.

The bureau also maintains an apprentice system for the scientific, technical, clerical and shop positions, by which it is possible to advance through all the grades by help of outside schooling.

During the summer months we are usually able to take on a few college men as "student assistants," and we would like to be able to accommodate more of them. Dr. Stratton also wanted very much to have provision made for a few permanent positions which would be recognized as research fellowships for graduates who desire to spend one or two years here in order to perfect themselves in some scientific field represented at the bureau.

At weekly meetings of the scientific staff the work of the bureau is presented formally; there are also two series of weekly lectures on recent advances in physical science; and the various scientific departments or divisions of the bureau have their own meetings at short intervals for presentation and discussion of work under way.

In addition to the bureau employees, there are now stationed at the bureau thirty-one research associates on the payroll of outside industrial trade or research associations. The period of service of these men is usually from one to three years. They conduct or assist in special lines of research and receive a broadened education prior to resuming their normal affiliations. For the coming year there will be in this number a fellow of the National Research Council who will work on problems in radioactivity.

The bureau is continually being visited by professors and students of American and foreign universities. Many come for only a few hours; others come to study and work for a period of from six months to a year or more. This is all good educational work of which the bureau is very proud.

The educational work of the bureau is disseminated in other ways than by the men who go through its halls. There are almost daily conferences with leading men of industry and research institutions, and in addition there are a very large number of conferences involving from a dozen to three hundred people. During the last year there were one hundred such conferences. Perhaps the most important conference each year is the annual Weights and Measures Conference to which delegates come from the states, cities and manufacturers of weights, measures and standardizing devices. The conference lasts for several days and for the past seventeen years has proved most valuable in reaching common understanding and encouraging uniformity in laws and practices throughout the country with regard to matters relating to standard weights and measures. Another very important conference initiated two years ago was that of the Public Utilities Engineers which has every promise of being an annual affair. There are some eighty or more advisory committees which are of great help to the bureau in planning its work. These conferences and committee meetings are a most valuable means of disseminating the results of the bureau's investigations to those most interested and of bringing to the bureau the best thought and practice of the technical and scientific men in the country.

The public is also being educated by the bureau, in association with the other national organizations, in matters relating to fire-hazards and in questions of safety, such as traffic regulations, electrical and gas safety codes and similar codes providing for safety rules in many industrial operations.

Again, the Bureau of Standards may be said to maintain a correspondence school in the subjects with which it deals, for it receives a surprisingly large number of requests for information, the answering of which takes a considerable portion of the time of the staff; this amounts to some three hundred letters a day.

Through its division of simplified practice the bureau is educating the business man to the advantages of elimination of waste by curtailing unnecessary styles and varieties of the commodities of commerce; and through its division of building and housing is carrying out an educational campaign to aid house owners, builders and municipalities.

The formulation of specifications is, in effect, the framing of a series of instructions based on recognized standards of quality or performance, for use in buying and selling.

Thus, standards sooner or later become of economic concern, as when they are formulated in specifications for the purchase of commodities of commerce. For many years the bureau has been engaged in this type of educational work which is rapidly extending in scope. A year ago last May, for example, there was a conference called by the Secretary of Commerce of the purchasing agents of the states. The activities resulting from this conference will do much to bring better standards to public institutions, and following this, will also raise the standards of the articles of commerce generally; for we find that when the national government has arrived at a standard specification, private agencies are very likely to adopt it. For instance, the Bureau of Standards in association with other government establishments developed a standard cement specification some ten years ago. Now that standard is the one adopted by the American Engineering Standards Committee and by the country generally. The bureau is working on a dictionary of specifications which, completed, will take somewhat the same place in all purchasing offices that the ordinary dictionary does among educators.

The bureau not only has an educational influence by having representatives in most of the leading scientific, technical and engineering societies and committees of the country such as the American Chemical

Society, the American Physical Society, the American Society of Testing Materials, the American Engineering Standards Committee, and many others, but it also distributes a large amount of printed material through its own publications, through society publications, the technical and daily press, as well as by mimeograph circulars and letters. Up to date the bureau has published 256 technologic papers, 487 scientific papers, scores of circulars and miscellaneous publications, and hundreds of letter circulars, a monthly summary of its work called the *Technical News Bulletin* and other mimeographed reports, as well as thousands of reports and articles published in outside papers. Within the last month there has appeared among the leading books of the country, one on electroplating and one on storage batteries by two members of the bureau staff.

The scientific and technical publications of the bureau are widely used as reference books, some as text-books, and a few, written in non-technical language, have a wide circulation among the general public.

The educational aspects of the bureau's work are thus seen to be manifold, looking not only to enhancing the status of its staff, but reaching out through many channels in various ways to an ever-increasing public.

George K. Burgess
Director, Bureau of Standards

THE EDUCATIONAL WORK OF THE DEPARTMENT OF AGRICULTURE[1]

The work of the Department of Agriculture affects the people as directly as that of any branch of the government. It not only deals with the nation's food supply, but with the purity and integrity of that supply. It deals with the health and diseases of animals and plants; with the building of roads; with the purity and proper labeling of drugs; the control of rodent and insect pests; the national forests; weather warnings; and many other widespread activities. Through its cooperative educational extension system it touches directly over a million farm families every year.

The modern university does work in three main divisions—research, resident teaching and extension. The United States Department of Agriculture works in all these lines and might not improperly be called a great agricultural university.

Research. Its research work is carried on through eleven bureaus: weather, animal industry, plant industry, soils, chemistry, entomology, biological survey, forest service, roads (and agricultural engineering), agricultural economics and home economics.

The research or experimental work ranges from the more simple practical experiments such as tests of varieties of fruits and vegetables or spraying experiments with insecticides and fungicides to elaborate and fundamental scientific investigations such as studies on upper-air meteorology, the bacteriology of animal diseases, soils or dairy products, human metabolism and the relation of light to plant growth, etc.

These researches cover all the branches of plant production (agronomy, horticulture and forestry), animal production, agricultural technology (especially dairying and food manufacture), agricultural engineering (roads, irrigation, drainage, farm buildings and implements), agricultural economics and sociology, home economics, plant and animal pathology, economic entomology and biology, agricultural physics, chemistry and bacteriology.

The research work is done in laboratories and greenhouses in Washington, at the Arlington farm across the Potomac, at nearby experiment stations at Bethesda and Beltsville, Maryland, and at stations in

[1] Presented at the meeting of the Educational Press Association of America, July 2, 1924.

various parts of the continental United States, in Alaska, Hawaii, Porto Rico and the insular possessions, and in many foreign countries.

The department also promotes agricultural research through its administrative and advisory relations with the agricultural experiment stations in the forty-eight states and carries on many investigations in cooperation with these stations.

The results of the research work of the department are published in many technical and popular publications, which are widely distributed free of charge and are sold by the superintendent of documents of the Government Printing Office. Colleges, schools and libraries in all parts of the United States and in many other countries are regularly supplied with these publications. Many of these results have also been incorporated in text-books and manuals used in colleges and schools.

Part of the research work of the department and the state experiment stations is published in the *Journal of Agricultural Research*, and brief accounts of practically all the agricultural research of the world are published in the *Experiment Station Record*.

In its research work the department employs over 2,000 technically trained men and women, and expends about $9,000,000 annually.

Resident Teaching. The department does only a little resident teaching and carries this on unofficially outside the regular working hours. The primary purpose of this work is to afford employees of the department an opportunity to fit themselves for better service to the country, of whose government establishment they are a part. Only scientific and technical subjects in which there is not already adequate instruction in Washington are included in the courses given at the department. Most of these courses are quite special and of an advanced graduate type, though a few are of a more general character, in the nature of review courses for undergraduates. Dr. E. D. Ball, the director of scientific work, has had general charge of this enterprise. The instructors have usually been experts employed in the department, but a number of specialists from outside institutions have given courses.

Credit toward graduate degrees has been allowed for these courses by a number of standard graduate institutions, and many others have expressed their willingness to accept them. Among the courses given during the past three years were those on physics of the air, plant physiology, genetics, physical chemistry of the colloids, infection and immunity, agricultural prices, advanced economic theory, statistical methods, etc. There were 245 students in the courses given the past year.

The department also promotes the teaching of agriculture in colleges and secondary and elementary schools through a small division of agricultural instruction. This has cooperated with state departments of education and agricultural colleges in outlining courses in agriculture for elementary schools and has assisted teachers in such schools to get the department publications, lantern slides, etc., useful in their work. It has also cooperated with the Federal Board for Vocational Education, under a special provision of the Smith-Hughes act, in the preparation of publications for the use of teachers of agriculture in the secondary schools. Special attention has been given to making job analyses of various agricultural enterprises and showing how these analyses may be used in the construction of courses of study.

For many years the department has cooperated with the Association of Agricultural Colleges (now the Association of Land-Grant Colleges) in studies regarding the curriculum and methods of teaching agriculture in the colleges. The director of the states relations service, now the spe-

cialist in states relations work, has been chairman of the standing committee of the association charged with this work and the material for the reports of the committee has been collected by the department under his supervision. The committee in recent years has made three reports on the improvement of college teaching and in 1923 reported on (1) means of adapting instruction and rate of progress to the ability of students, with particular reference to the stimulation of scholarship; (2) the status of vocational courses in agriculture in high schools, and (3) the relation of the land-grant college to rural school improvement. The twenty-six annual reports of this committee may be found in the published proceedings of the association, 1896–1923.

Extension Work. Extension work has been carried on by the department from its beginning, partly by the wide and free distribution of its publications and partly by sending its specialists in the various branches of its work to address students and teachers in colleges and schools and large and small assemblies of farming people throughout the country. It has also, for a long time, made exhibits of its work at state, national and international fairs. When the farmers' institutes, carried on by the state departments of agriculture and the agricultural colleges, became important factors in the popular education of the farming people, the department actively promoted this work and participated in it to a considerable extent. A special farmers' institute office, which cooperated with the state managers of the institutes, was maintained for several years in the office of experiment stations. Through its bureau of plant industry the department developed the farmers' cooperative demonstration work, under the leadership of Dr. Seaman A. Knapp, and inaugurated the system under which men and women agents are located in the counties to instruct the men, women and children on the farms with reference to the improvement of agriculture and of home and community life.

With the passage of the Smith-Lever Extension Act in 1914, the demonstration system, the farmers' institutes and other features of agricultural extension work were combined in a national system of cooperative extension work in agriculture and home economics. This is a unique measure in that it expressly provides for close cooperation between the federal department of agriculture and the state agricultural colleges in the planning and conduct of the work and by implication also presumes the active cooperation of county governments and farm organizations in this enterprise. Besides the federal appropriations under the terms of the Smith-Lever act, congress has enabled the department to contribute financially to the cooperative system by continuing appropriations for farmers' cooperative demonstration work. The states and counties have also shown their appreciation of this work by providing funds greatly in excess of the offset to federal funds required under the Smith-Lever act. For the current fiscal year the funds from all sources used in the cooperative extension work aggregate about $19,000,000. Of this amount $5,880,000 are federal or Smith-Lever funds and $1,300,000 farmers' cooperative demonstration funds, making a total federal contribution of $7,180,000. From sources within the states there are about $11,900,000, made up as follows: $5,400,000 Smith-Lever funds, $1,600,000 extra state and college funds, $4,250,000 county funds and $650,000 contributions from farm organizations and miscellaneous sources.

The cooperative extension force employed in the states includes 2,172 white county agricultural agents and 166 negro agents; 849 county home demonstration agents and 88 negro women agents, and 147 county leaders of boys' and girls' clubs. (The other county agents do much club work.) There

are also about 780 extension specialists in the various branches of agriculture and home economics, 350 state leaders of the county work, and their assistants, and 48 state extension directors, making a total force of about 4,600 technically trained men and women.

All the work in each state is under the general management of an extension director, who is the joint representative of the state college and the United States Department of Agriculture.

The department maintains, at Washington, an office of cooperative extension work, which deals with the administrative and cooperative work under the Smith-Lever act and department appropriation acts. Representatives of this office and the different bureaus of the department go into the states to do extension work in cooperation with the state forces. This office is part of an extension service in the department, which also includes the office of exhibits and the motion picture laboratory.

The cooperative extension work in agriculture and home economics is the largest and most comprehensive system for the practical education and inspection of the farming people. It includes the giving of information and instruction on plant and animal production in its different phases, the prevention and control of plant and animal diseases and insect and other pests, the handling of milk and the making of butter and cheese, the storage and transportation of agricultural products, marketing and other economic problems, the organization and functions of rural communities, food and diet, clothing, household equipment and management, sanitary measures for prevention of human diseases, care of children and invalids in the home, family budgets, recreation, relation of the home to social life, etc.

Several hundred thousand farm men and women annually participate in the demonstrations on the farms and in the homes, and several million people attend the farmers' institutes and other meetings included in the extension programs. More than half a million boys and girls are annually enrolled in the clubs, carry on home projects and receive useful instruction. They are also encouraged to get more education. Many of them stay longer in the elementary schools or go on to the high schools because of the interest aroused in the club work and a goodly number attend short or long courses at the colleges. The rural school officers and teachers in a great many cases cooperate cordially with the extension agents and much of the club work has some connection with the school work.

The office of motion pictures of the Department of Agriculture is probably the largest producer of educational motion pictures in the United States. It has produced about 190 pictures, of from one to four reels, illustrating the work of the department. These pictures cover a wide variety of subjects, such as the control of injurious insects and diseases of crops and livestock, the best methods of producing and marketing the various crops, the construction of roads, the safeguarding of the federal forests from fire and the protection of the public health by the inspection of meats and by the elimination of tubercular livestock. These films are distributed without cost to the user except the payment of carrying charges, and may be obtained on request by the schools and colleges. Copies have been sold to many educational institutions. Our films are used to a considerable extent in the visual education program of the public schools in Washington and elsewhere, and are used almost exclusively in the Americanization schools in Washington.

The office of exhibits prepares material for visual instruction in the form of exhibits illustrative of the work of the department primarily for showing at state and interstate fairs. While it is somewhat hampered by legislative restrictions it makes

a limited number of exhibits at gatherings of commercial, technical and educational associations. During the past year the department's exhibits were presented at about 110 fairs. The office of exhibits has set up material illustrative of the work of several of the bureaus in the department in "Building F," on the Mall, on the west side of 7th Street, and those in attendance at the convention will be welcomed both there and at the motion picture laboratory of the department at 1363 C Street, S. W. The personnel of these two offices will be glad to give detailed information on the work of the department in these two fields of visual instruction.

C. W. WARBURTON
DIRECTOR OF EXTENSION WORK,
U. S. DEPARTMENT OF AGRICULTURE

EDUCATIONAL EVENTS

DEFECTIVE EYESIGHT IN THE PUBLIC SCHOOLS

THE Eyesight Conservation Council of America has issued a report in which it is claimed that the cost to the nation of defective eyesight in the public schools amounts to $130,000,000 annually. Approximately 25 per cent. of all school children in the United States are retarded in their studies and fully one third of this retardation is conservatively estimated as due to defective vision. If this is a correct estimate, there are at least 2,000,000 school children who for this reason are one or more years behind in their studies.

According to the United States Bureau of Education, the cost of public elementary and secondary education for the entire United States averaged in 1920, $64.16 per pupil per year. If each one of the 6,000,000 retarded children in the United States, as estimated, was forced to drop back only one year, the cost would be $390,000,000.

The public school system spends this amount each year in order that these children may have one or more years longer to complete their education. At least one third of this amount, or $130,000,000, is lost annually because the eyesight of the children is neglected.

This estimated cost is low, for the average backward pupil is retarded more than one year. Studies made in two cities of 5,815 retarded pupils show a total of 12,970 school years lost, making an average much in excess of two years for each retarded pupil.

Furthermore, the estimate does not represent the total loss to the child and to the state when consideration is given to the future inefficiency, lowered earning power and less competent service of the individual as an economic unit of society.

Investigations of 28,667 public-school children with defective vision show that of this group an average of 67 per cent. were retarded in their studies one or more years. This is almost three times as high as the retardation of groups when not classified according to eyesight. In another group of 32,050 pupils, of which retardation investigations were made without segregating or giving consideration to conditions of eyes, the proportion of those retarded in their studies averaged 24 per cent.

Of 7,319 school children found with defective vision in the public schools eye clinic of one of our large cities, 72 per cent. were backward in their studies. An examination of 2,185 rural school children in a mid-western state disclosed that of those retarded nearly 60 per cent. had visual defects.

The correction of visual defects results in a marked improvement in school progress. The records of 20,000 cases sent to a public school eye clinic for correction of refractive errors show that from 60 to 70 per cent. of the children were classified as backward, mentally deficient, stupid or habitually left back. The careful follow-up system proved that after their defective vision had been corrected, 70 to 80 per cent. of these children progressed and took their place in the class with the normal average child. The reason the remaining 20 to 30 per cent. did not progress was because their retardation was due to causes other than defective vision. The proportion of retardation in another group, all with visual defects, was found to be 85.4 per cent. One year later, after the defective eyes had been corrected by glasses, only 17 per cent. of those corrected continued to be backward in their studies.

Furthermore it has been found that the proportion of retardation increases with an increase in the degree of visual defects. Pupils who have less than one half normal vision are much more retarded than those with lowered vision of a lesser degree.

CONFERENCE OF SOCIAL WORK AT THE UNIVERSITY OF MINNESOTA

SOCIAL workers from all parts of Minnesota attended the State Conference of Social Work held this week at the University of Minnesota. The conference took place at the university farm, and the visitors were quartered in the dormitories of the College of Agriculture.

A feature was an institute of social work, with meetings each morning from September 6 to 12. Among the lecturers were members of the department of sociology of the University of Minnesota and the following teachers in other departments: Professor Justin Miller, of the law school; Dr. Max Seeham, of the medical school; Professor John M. Gaus, of the department of political science, and Dean Walter C. Coffey, of the department of agriculture.

The work in sociology at Minnesota is of interest in this connection. Dr. F. Stuart Chapin, head of the department, reports that more than 3,000 students were registered in courses in sociology last year. While by far the greater number of these took the subject as a customary and interesting segment in the field of general education, a large number chose to pursue advanced work in it as graduate students, and between 60 and 70 were enrolled in the training course for social workers.

There is a double relationship between the social agencies of Minnesota and the sociology department of the university, in that the agencies offer opportunities to students, who work out problems for them, and the students, on completion of their university training, go out into the state to supply the increasing demand for social workers.

These agencies include the Ramsey County Child Welfare Board, Hennepin County Child Welfare Board, the Juvenile Court, the Children's Protective Society and the Visiting Teacher Service. The United Charities of St. Paul, St. Paul Dispensary, medical-social case work and work in settlement houses broaden the opportunities in many directions.

DR. MEIKLEJOHN'S PLANS FOR A NEW COLLEGE

THE establishment of a new and "independent" college is planned by Dr. Alexander Meiklejohn, former president of Amherst College, according to a dispatch from New York, where Dr. Meiklejohn has been in conference with friends and earlier associates. The aim is said to be the creation of a college where emphasis will be placed upon the teacher's freedom to teach, and where there will be no trustee control and a minimum of administrative machinery.

To found the new institution a fund of $3,000,000 is thought to be sufficient. Part of this sum would be used for the purchase of a site, possibly and perhaps preferably a site with the necessary buildings already erected on it, the idea being to make use of the plant of some abandoned school or other like institution, so that the outlay for physical cost may be as modest and economical as possible.

The balance of the fund, increased by tuition fees, would be used for the support of the teaching staff. Although various rumors are current as to the identity of the men likely to become leading members of the new college faculty, if the plan is successfully launched, no final agreements have yet been concluded.

Among the men whom Dr. Meiklejohn has consulted on the project is Mr. R. H. Tawney, of London, counsellor of the British Labor Party, who recently sailed for England after attending the Williamstown Institute of Politics. Mr. Tawney visited Amherst College as a special lecturer during Dr. Meiklejohn's presidency.

In an editorial entitled "Dr. Meiklejohn's Venture" the Boston *Transcript* said:

> The courage of this attempt should commend it not only to Dr. Meiklejohn's friends but also to his antagonists. It brings to straightforward trial the very issues which Dr. Meiklejohn has raised—but never yet settled—in American academic life. First off, there will come the exceedingly practical test whether the former dean of Brown University and erstwhile president of Amherst does indeed possess concepts and purposes for the reform of our higher education so vital and appealing that he will succeed in raising the financial endowment necessary for their practical realization. If this prove true, then the test will go forward to real conclusions. It will be possible to determine with some accuracy whether all those things which the great majority of us believe are the assets and safeguards of the typical American college—namely, its time-enriched traditions, the loyalty of its alumni, the

service and counsel of its trustees—do indeed work for the ultimate benefit of a collegiate faculty and its student-body, or whether they are, as Dr. Meiklejohn has seemed to find them, in important measure a hindrance to effective teaching and effective learning.

REORGANIZATION OF THE PENNSYLVANIA DEPARTMENT OF PUBLIC INSTRUCTION

DR. J. GEORGE BECHT, superintendent of public instruction of Pennsylvania, gives in the September issue of the *Pennsylvania School Journal* a summary of the reorganization of the Department of Public Instruction which has just become effective under the administrative code.

Among the new relations created by the code is the attachment to the department of fourteen professional examining boards, the state library and museum, the school employees' retirement board, the historical commission and the board of censors. Four state schools, formerly under the Department of Welfare, are now definitely under the supervision of the Department of Public Instruction. The budgets of all educational agencies and institutions receiving state aid now "clear" through the department.

To coordinate field contacts and "to eliminate waste of time, effort and money," a bureau of field service has been organized. The counties of Pennsylvania "have been divided into districts. Two of these districts, one at a distance from, and one near, Harrisburg, have been assigned to a district director. Each director will be held responsible for making all the field contacts of the department except in cases where the services of specialists are required."

Because of the increased responsibilities and obligations of the department, two officers have been established in the department, each in charge of a deputy superintendent. The first of these is the professional service office, which acts as a "general clearing and coordinating agency for the superintendent in administrative matters in the educational field." The second office is the fiscal administration office, of which functions will be: "general coordination of departmental activities in the field of fiscal and business administration; all functions of the former bureau of administration."

A new system of central files is being developed for the department under the direction of a trained file executive.

A statistical section is now under organization in the fiscal administration office which will collect and assemble complete statistics of educational conditions throughout Pennsylvania.

EXTENSION COURSES FOR NEW ENGLAND TEACHERS

ACTING in cooperation with the Massachusetts State Department of Education, the Graduate School of Education of Harvard University and the School of Education of Boston University will this year offer widespread program of extension courses for school teachers of Massachusetts and adjoining states. Groups of teachers are now being formed for the work.

The purpose and scope of the program were outlined last week by Professor John J. Mahoney, of Boston University, director of the cooperative plan. As reported in the Boston *Transcript*, Professor Mahoney said: "This is a period of changing conceptions in education. Progressive school systems everywhere are expecting professional improvement on the part of teachers and school officers. The need is to bring the professional school to the teacher instead of compelling the teacher to go to the school."

The Harvard-Boston University cooperative plan resulted last year in the organization of 21 classes and the enrollment of more than 1,300 teachers. Classes were formed in 16 cities and towns in Maine, New Hampshire, Connecticut and Massachusetts.

Members of the faculty from Harvard this year will include Assistant Professor Beatley Bancroft, Associate Professor John M. Brewer, Dr. Walter F. Dearborn, Dr. Edward A. Lincoln, William H. Geer and Norman W. Fradd and Dean Henry W. Holmes.

Boston University professors who will take part are Associate Professor Herbert E. Blair, Dr. Edwin M. Chamberlin, Professor Roy Davis, Professor Jesse B. Davis, Professor John J. Mahoney and Professor Guy M. Wilson.

Others on the faculty will be Dr. Guy M. Whipple, of the University of Michigan; Walter F. Downey, headmaster of the English High School, Boston, and Oscar C. Gallagher, superintendent of schools at Brookline.

The courses given will, under certain circumstances, carry credit toward degrees at both Harvard and Boston University.

EDUCATIONAL NOTES AND NEWS

THE REVEREND JAMES DUANE, professor of theology and philosophy at Fordham University, has been appointed president to succeed the Reverend Edward P. Tivnan.

E. V. HOLLIS has been appointed president of the newly established Georgia State Normal School at Statesboro.

LEON LOYAL WINSLOW has resigned the supervisorship of art and industrial arts in the New York State Department of Education to accept a joint position as director of art in the public schools of Baltimore, Maryland, and teacher of art education in the Maryland Institute at Baltimore.

WILLIAM P. LOOMIS resigned as supervisor of industrial education, Pennsylvania Department of Public Instruction, effective on September 1, to accept appointment as professor of industrial education at the Pennsylvania State College.

CHARLES W. HUNT, formerly director of extramural instruction at the University of Pittsburgh, has taken up his new duties as dean of the Cleveland School of Education.

L. P. STEWART, principal of Carson High School, will be acting assistant superintendent of the Cincinnati public schools during the coming year.

AMMON R. KURTZ, of McKeesport, Pa., has been made principal of the Shaw Avenue Building and Teachers' Training School.

CHARLES F. BECKER, formerly superintendent of schools at Ellwood City, Pa., has become a faculty member of the department of education, Clarion State Normal School, Pennsylvania.

H. E. GRESS, who was formerly superintendent of schools at Monessen, Pa., is the new superintendent at Lancaster. He succeeds H. B. Work, at a salary of $6,000.

SUPERINTENDENT J. F. BENDER, who recently resigned the superintendency of the Pittsburg, Kansas, schools, will be a student in Teachers College, Columbia University, during the coming school year.

N. W. CAMERON, of Baltimore Teachers' College, succeeds A. E. Kraybill as superintendent of the Pottstown, Pa., schools.

FOUR additional physicians and fifteen additional nurses have been appointed to the staff of the Indianapolis public schools for nutrition work which it is planned to expand from the twenty classes conducted last year to fifty nutrition classes for the coming school year. The physicians appointed are: Drs. Robert E. Conway, Cyrus J. Clark, Jr., Ernest M. Haggard and Oliver W. Greer. The work will be supervised by Dr. James H. Stygall, assisted by Dr. Freeman H. Hibben.

HARLEY G. HODGKINS, of New York, has been appointed director of physical education in the Concord, Mass., schools, and in this capacity he will serve as coach of the high-school football, baseball and track teams. He succeeds Chester K. Delano, who resigned to become physical director in the Needham High School.

MISS LOUIE LESSLIE has been elected secretary of the Kansas State Board of Education, to succeed Miss Julia B. Stone.

MISS ELIZABETH S. HURLOCK, of Harrisburg, has joined the extension division of the department of psychology of Columbia University.

MISS ELIZABETH VILAS has accepted a position as instructor in home economics with the International Grenfell Association at the St. Anthony School on the northwest coast of Newfoundland.

A. G. C. SMITH, superintendent of the schools of Delaware County, Pennsylvania, is bringing friendly action in the Dauphin County Courts to determine the proper interpretation of the state retirement act, which stipulates that a teacher must retire at the age of seventy years.

The Pedagogical Seminary, founded and for many years edited by the late Dr. G. Stanley Hall, has become the property of the department of psychology of Clark University, and will be edited by Professor Carl Murchison.

DR. DAVID SNEDDEN, of Columbia University, and Dr. Harold O. Rugg, of the Lincoln School, were speakers at the second annual conference

of representatives of Massachusetts normal schools, held at Bridgewater last week.

PROFESSOR EDWARD G. SPAULDING, of Princeton University, will give a course, "Outlines of individual and social psychology," in the teachers' courses offered this fall and winter at the Brooklyn Institute of Arts and Sciences.

DR. JESSE F. STEINER, of the University of North Carolina, lectured at the University of Chicago on August 22 on "Community organization in a small community."

AMONG the speakers for the general sessions of the sixty-first annual meeting of the Kansas State Teachers' Association, to be held in Topeka, Hays, Hutchinson and Parsons, October 16, 17 and 18, are the following: The Honorable J. J. Tigert, U. S. Commissioner of Education; Albert Edward Wiggam, author of "The New Decalogue of Science," New York City; Whiting Williams, industrial expert and author of "What Is on the Worker's Mind," Cleveland, Ohio, and Aaron Sapiro, an authority on cooperative marketing.

ON August 17, the University of Chicago, Dr. James Fosdick Baldwin, professor of history at Vassar College, lectured on "Gladstone and the Gladstonian tradition"; on August 18, Dr. William Ezra Lingelbach, professor of modern European history at the University of Pennsylvania, discussed "Leaders in recent European history"; on August 20, Professor Reed Smith, of the University of South Carolina, gave a lecture on "Gullah: the worst English in the world," and on August 21, Dr. Henry Carrington Lancaster, professor of Romance languages at Johns Hopkins University, gave an illustrated lecture on "French stage decoration in the seventeenth century."

PLINY TITUS SEXTON, who served as a member of the New York State Board of Regents since 1890, and as chancellor from 1915 to 1921, when he was made chancellor emeritus, died on September 5, aged eighty-four years. Mr. Sexton also served, in 1913, as acting New York State Commissioner of Education.

THE death is announced of Dr. Richard F. Scholz, president of Reed College, Portland, Oregon.

THE REVEREND JOHN B. RENDALL, president of Lincoln University, Lincoln, Pa., died at Lincoln on September 4, at the age of seventy-seven years.

N. D. GILBERT, instructor in psychology in the Illinois State Teachers' College at De Kalb, died suddenly on August 1.

THE death is announced of Professor Paul Natorp who, as leader of the Marburg school of Neo-Kantian idealists, had been recognized for many years as in the first rank of living philosophers. Professor Natorp is best known for his critical treatment of Herbart and his attempts to infuse new life into the ideas of Pestalozzi. He was the author of many books, and published, in 1910, a much-discussed work, "The Logical Foundations of the Exact Sciences."

IN reference to the controversy regarding high-school council meetings in the Chicago school system, Superintendent McAndrews has written a letter to the president of the teachers' council in which he says: "I can think of no benefits derivable from the councils which depend on their taking teaching time. . . . Considering the damage the schools suffer from crowded classes and distorted sessions we all need to reduce to the minimum interruptions of every sort." In this attitude, Dr. McAndrews has the support of Mr. Charles M. Moderwell, president of the board of education. The issue of the usefulness of the teachers' councils was raised last spring when Dr. McAndrews refused to call a meeting of the elementary teachers' councils. The Chicago Teachers' Federation and William E. Dever, mayor, support the contentions of members of the Teachers' Councils, holding that the councils serve to transmit the opinion of the majority of teachers to the superintendent and that they are legally justified in school hours.

THE School of Education of Boston University has moved into its new quarters in the building at 675 Boylston Street, opposite the College of Liberal Arts building.

BEQUESTS totaling $105,000 for colleges in the United States and Turkey are contained in the will of the late Jacob J. Arakelyan, of Dorchester, Mass. Constantinople College is to receive at once $10,000, Robert College $10,000, and the American University of Beirut, $10,000. After the death of the wife of the testator, the following six institutions are to receive bequests:

Berea College, $10,000; Piedmont College, $10,000; Gordon Bible College, $10,000; Harvard University, $15,000; Antioch College, $10,000; Atlanta Theological Seminary, $5,000.

LEBANON VALLEY COLLEGE, Annville, Pa., recently completed a campaign in which $390,000 was subscribed. The goal aimed at was $350,000, in order to obtain a gift of $175,000 from the General Education Board.

SUSQUEHANNA UNIVERSITY at Selinsgrove, Pa., has received an endowment of $50,000 for the president's chair as a bequest from the late William Decker, of Montgomery County.

THE public-school building program of San Francisco has been approved, and final specifications are ready for the immediate construction of five new elementary schools ordered by the board of education. Each school will have 24 class rooms and auxiliary rooms for vocational and study purposes. The city's present school building schedule, said to be ten years behind, involves the expenditure of $12,000,000, provided in a recent bond issue.

STATE COMPTROLLER BUGBEE has been advised by the Attorney General's Department of New Jersey that the legislature's action in appropriating $1,200,000 for the teachers' pension and annuity fund relieves his office of dealing with the request of the fund trustees for $2,440,046. Because of the smaller allotment there will be more state school money to be distributed among the counties.

A MEASURE proposed by the initiative to compel all children in the State of Washington between the ages of 7 and 17 to attend the public schools has been raised to an issue of importance in determining the choice of candidates for governor in the Republican and Democratic party primaries. As reported in the daily papers, the compulsory school bill, as it is commonly known, is frankly sponsored by the Ku Klux Klan, which two years ago secured the enactment of a similar measure by popular vote in Oregon. The Oregon law was held unconstitutional by the Circuit Court of the Ninth Federal District and is now on its way by appeal to the United States Supreme Court. The measure initiated in the State of Washington will not come to vote until the November elections, while the party candidates were chosen at the primary elections on September 9. Until recently candidates of all parties have been disposed to ignore the school bill as a matter of no partisan concern. The situation was changed by the open declaration of hostility to the measure by William J. Coyle, lieutenant-governor, and one of the ten candidates for the Republican nomination for governor. The challenge was met by W. H. Paulhamus, another of the candidates, with a declaration in favor of the bill. The other eight candidates have been silent on this issue. Of the four candidates for the Democratic nomination for governor, only E. F. Blaine declared himself against the school bill while the other three have had nothing to say.

THE Illinois State Department of Health has arranged for a conference at Springfield, early in September, which will be an organization meeting for the creation of a state council of child health agencies. Every organization which operates on a state-wide scale in the field of maternity and child hygiene has been invited and most of them have accepted the invitation. The object of the council will be to create a clearing house for all problems in the field of child health service, and the first conference is expected to result in the adoption of a constitution, a name for the organization, the election of permanent officers and the appointment of committees.

WE learn from the *Pennsylvania School Journal* that forty-five delegates, made up of thirty-three trustees and twelve principals, from the fourteen State Normal Schools met in the conference room of the Department of Public Instruction in June and formed an organization to be known as the Association of Pennsylvania State Normal School Trustees. The State Superintendent of Public Instruction, Dr. J. George Becht, welcomed the delegates, outlined the work of the normal schools and expressed his approval of the proposed organization and its objectives. The purposes of the organization, as outlined in the by-laws which were adopted, are to stimulate interest in school work throughout the state; to become acquainted with the problems and opportunities of the normal schools, through conferences; and to render assistance and help to each other and to the Department of Public Instruction. The annual meeting is to be held on the last Friday of September in Harrisburg. Special meetings

may be called at the request of trustees from five normal schools. The officers elected for the ensuing year are: *President*, Judge F. L. Harvey, Clarion; *First Vice-president*, Hon. H. Edgar Sherts, Millersville; *Second Vice-president*, Thomas Sutton, Indiana; *Secretary*, Mrs. Howard Mellor, West Chester; *Assistant Secretary*, F. A. Loveland, Edinboro; *Treasurer*, J. G. Benedict, Shippensburg.

THE total attendance at the recent summer sessions of the 13 normal schools of Pennsylvania was 9,200, according to figures reported to the State Department of Public Instruction.

ALMOST 20,000 school children from the cities of Wisconsin have visited the State Historical Museum at Madison during the past eight years. The number of visitors for the past year is 4,147, as compared with 1,258 for the same period in 1916–17—an increase of about 350 per cent. Of this number 1,171 came in May. During the past academic year 1,047 students in university classes in the library school, art, journalism, home economics, horticulture, economics, zoology and short course agriculture worked in the museum. 862 high school students have also registered. Rural schools sent 443 pupils and the teacher-training schools 347. A deaf and dumb class, several subnormal classes, kindergartners and others in Madison schools, numbering in all 416, also visited the museum. Parochial and other schools sent 1,032 visitors.

ENROLLMENT of Negro pupils in Cleveland's public schools in October, 1923, was greater than the total Negro population of Cleveland in 1910. Of the 9,066 Negro children, 1,842 were southern Negroes who entered Cleveland public schools for the first time in September, 1923. Of these 725 or 39 per cent. came from Georgia. A survey of Cleveland schools shows that 2½ per cent. of the enrollment of high-school grades 10 to 12 are Negroes.

THE American Bar Association is asking schools to join in the observance of Constitution Week, September 14–20. Programs giving the sources of the Constitution, the Bill of Rights, the services of John Marshall and other material have been distributed by the citizenship committee of the American Bar Association, 1412 Magnolia Building, Dallas, Texas.

IN response to the pleas of one hundred school teachers who were passengers on the steamship *La Savoie* of the French Line, the captain speeded up his vessel so that she docked at New York on September 2, eleven hours ahead of schedule. The teachers were thereby in time for registration at their various schools in New York state. The steamship had been delayed five days in embarking at Havre because of a seamen's strike.

A HOME study course of the Bible, planned by a group of business men, has resulted in the organization of the Chicago Bible Extension College, which hopes to enroll 20,000 students by correspondence before the end of the year. The course is to consist of fifty lessons "covering all the principal doctrines of the Bible, to be in harmony with all fundamental beliefs of the various evangelical churches. While advocating what are considered correct views, different views also will be included." At the close of the course an examination will be held and diplomas awarded to those averaging 80 per cent. or more.

THE plan of a sabbatical leave for teachers in New York City public schools, which has been pending now in some form or other for a period of five or six years, will be acted on by the Board of Education at an early meeting this fall. For the first time in the course of its long agitation the proposal for a sabbatical leave was passed by the board of superintendents during the past school year in the form of a plan drawn up in detail by a committee of the board. This plan, which provides for leave after ten years of service, requires that the cost of paying for a substitute be deducted from the salary of the absent teacher.

BY passing the diplomatic and consular vote, the House of Commons sanctioned the gift by the British Government of $125,000 for the purchase of books in Great Britain for the Tokyo Imperial University.

PUBLIC schools throughout the state of Sonora, Mexico, are closed as the result of a general strike proclaimed by school teachers. The strike was called when the state failed to meet demands of the teachers for salaries due amounting to approximately 100,000 pesos ($50,000) or to make provisional guarantees for

flat payments. Although the schools were scheduled to open September 1, the doors of every public institution of learning in the state are closed tight. Many of the teachers have received no salaries for last year's work.

Nature states that at the recent meeting of the Conference of British Universities, it was announced that "Federalization" of the London Institute of Historical Research in the interest of students of British universities has been adopted by the council of the institute. In America a movement of a similar character has been set on foot with the object of utilizing in the future more fully than in the past the material and scholarly resources at Washington for purposes of graduate study and research by students from all parts of the United States.

THIS year marks the tenth anniversary of the establishment of the department of education of Ohio Wesleyan University. The work began in 1914, with a single professor who gave instruction to 150 students. There are now four full-time professors: Dr. A. R. Mead, Dr. Hubert W. Nutt, Dr. Charles C. Peters and Professor L. J. Bennett, two part-time assistant professors, five part-time instructors and six special supervisors. The 1923–24 enrollment was 333 students, including 28 post-graduate students. Laboratory work in supervised student teaching is done by the department in two centralized rural school systems, Kilbourne and Radnor; a new type of fifth-year work has been started in the city schools of Columbus. In the development plans of the university, for which $8,000,000 is being sought, there is provision for a $100,000 building for the department of education.

To gain first-hand knowledge of Mexican business methods, a group of students from Boston University and other colleges have been in Mexico City this summer taking courses in commercial subjects at the National University of Mexico. These students are employed by Mexican business firms during the mornings and early afternoons, and though they receive no pay for this work they will receive college credit for the experience. The university lectures are given in Spanish, but an outline and résumé in English of each course is supplied to English-speaking students. The courses are given by special arrangement between the National University of Mexico and Boston University, and the students do not pay any extra tuition fees.

DISCUSSION

HISTORY OF SCIENCE IN LONDON UNIVERSITY

IN view of the recent organization of a History of Science Society in our country (SCHOOL AND SOCIETY, vol. XIX, p. 187) it may be of interest to note that according to the *Mathematical Gazette*, July, 1924, London University will offer "a new higher degree course in the history and method of science" at the beginning of the next session in October. This is a one-year course and it is hoped that all the lectures will be given in the late afternoon or early evening so that they can be attended by teachers who are at work during the day. The degree of M. Sc. is available for those who complete the course successfully. "It is the function of the course not so much to impart a knowledge of science in itself as to enable the candidate to grasp the general aims and nature of science and of scientific problems, the character of scientific method, the relation of science to other studies, and the educational value of scientific teaching. It is evident that such a course will be of peculiar value to the science teacher."

While the course is mainly a study course the last part of it aims to serve also those who propose subsequently to undertake research, since the student is supposed to select a particular part of the general subject which may appeal to him especially and then enter upon a somewhat more minute study of this part. It is said that a number of advanced students in London have been working at the history of science for research degrees and that one has already taken the Ph.D. degree along this line. Probably history of mathematics presents the greatest difficulties as regards such a general science course since some of the methods employed in the more advanced parts of this subject can be fully understood only by those who have mastered these parts. On the other hand, there is much that is extremely simple even in the more modern fields of mathematical investigation so that such a history of science course need not restrict itself to the older developments even in this field.

UNIVERSITY OF ILLINOIS G. A. MILLER

WHAT IS A LIBERAL?

IN writing to one of the leaders of our younger liberal movement recently I had occasion to formulate a definition of liberalism. He

took exception to each item of my definition (a good deal to my surprise), but without formulating any clear conception of his own; which has given me the idea that publicity might elicit from some one a definition that would represent the ideas of the younger group that has been rapidly getting prominent in this country.

Here is my definition, with comments:

(1) *that the world is progressing.* My correspondent writes: "I do not see that any belief that the world is progressing is essential to liberalism; the evidence seems to me highly doubtful." I submit that historically the liberal tradition *was* based on the idea of the world's progress, as contrasted to the idea, for instance, of original sin, and the fundamental conservatism of the medieval catholic;—that this idea underlies the difference between the liberal and the conservative, who believes we should hold to the old, lest the world grow worse.

(2) *To help on that progress.* He writes: " . . . assumes that you know where that progress is—one may, or may not." I submit that a constructive member of society, including every acting liberal, will do his best to find out where progress is possible and act on what he may find. We may not perhaps all arrive at the same *program.*

(3) *By gradual rather than revolutionary methods* (as opposed to radicalism). He writes: " . . . of course lets several cats out of the bag. Personally I think that both may be and at many times have been required." And he goes on to cite the French and American Revolutions. As I merely put in this clause to discriminate between liberalism and radicalism, without insisting on the usefulness of one or the other, this seems to be begging the question, which was one of definition, not morals. I submit that revolutions, even when advisable, are *radical* acts.

(4) *To see progress not only in greater efficiency, but also in greater freedom, so far as one person does not thereby interfere with another's freedom more than he gains of his own.* My correspondent writes: "There again the vague phrase does not help us, because we all disagree as in matters of prohibitions, foreign policy, war, intelligence tests, etc., as to where our freedom ends and another's is invaded." It seems to me nevertheless that the whole history of the liberal movement has aimed at freedom and efficiency. My phrase is certainly too vague for a code, and innumerable codes have been proposed; but is it not an essential part of the *spirit* of liberalism?

WM. T. M. FORBES

CORNELL UNIVERSITY
ITHACA, NEW YORK

QUOTATIONS

THE BOSTON SCHOOLS

BOSTON, probably unique among the large cities of the country in this respect, has sufficient school-housing accommodation for its entire school population. Nobody contends that this accommodation as to quality is all that could be desired. Old-fashioned buildings, inadequate both from educational and sanitary standpoint, must, as funds are available, give place to newer structures, where the appurtenances of the modern education may be exemplified. Neither is there any disposition to regard the school-housing problem as settled for any length of time. The number of children to be taught is constantly increasing and facilities must keep pace. It is an achievement, however, even temporarily to be abreast with the requirements, and this achievement is sufficient endorsement of the Boston school-building program.

From an industrial standpoint it may not be efficient to keep the school plant running at less than its capacity, that is, that there should be some part of the working day when the buildings are not in use. Industrial standards, however, have only a limited application to mental activities. If education could be measured with a yardstick, or weighed by avoirdupois or troy, then the school board might be replaced by a group of efficiency engineers and the superintendent of schools by a production manager. Fortunately for the progress of the race, however, this can not be. From an educational standpoint it is the worst possible economy to use the school buildings for more than one session. Community activities are of course admirable and to be encouraged. New York's outcry at the double session is evidence of its inutility. Philadelphia, Chicago and St. Louis have to resort to it occasionally, but under protest. Boston, before the next school year ends, will have a seat for every pupil in all grades.

Last year the only necessity for dual sessions was in the Dorchester High School. The completion in January of the new building on which $1,000,000 will have been spent will relieve this condition.

Adequate accommodation has been maintained through the device of portable buildings, which have been put up where necessity demanded. It is cause for congratulation that these are no longer being constructed. Those in use are moved from one place to another to relieve the congestion, and as the building program advances, they will be discontinued entirely. Some twenty-six portables were moved during the summer and about sixty altogether are in use. Six new buildings have been completed and the most important projects under way are the nearly completed Dorchester High School and the Roxbury High School at the corner of Warren and Townsend Streets. The completion of these will leave the old quarters available for the lower grades. Another wise provision of the school board is the purchase of suitable houses which can be turned into schools at less expense and in less time than would be necessary to build new buildings. Such properties as that on Walnut Avenue in Roxbury are easily adaptable.

Boston's physical educational equipment gives reason for pride. It is to be hoped that what is taught in these buildings will give equal cause for congratulation.—Boston *Evening Transcript.*

MAYOR HYLAN AND THE NEW YORK CITY SCHOOLS

THE mayor's picture of eight miles of new school buildings during his administration makes a creditable showing. This mileage probably includes the sixty buildings now under construction, for the sixty-two elementary school buildings and the five high school buildings would cover only about four miles. No one is disposed to take one foot of credit from the mayor for carrying forward this great program. But it was not necessary to take a fling at his predecessors, and especially the Mitchel administration, which was proceeding upon a "pay-as-you-go" policy and was also interfered with in a more moderate building program by the war. As it is, the present administration gets the credit, but the next decades will share in paying for these eight miles of buildings. There is quite enough glory for Mr. Hylan in what he has done without making unfair comparisons.

It also seemed unnecessary to hit out again at the so-called "Rockefeller-Gary" plan. On this subject the mayor seems to be obsessed. It would be profitable for him to acquaint himself with just what the system is. It would be better still if he would leave such matters to those whose business it is to know about school administration. Fortunately, an investigation is planned by the Department of Education to be made by the most competent educational experts. This should procure a body of sound advice that ought to be of value to the Board of Education and the superintendents, principals and teachers of this greatest school district in the world.

What is being done to provide playgrounds for the school children is also deserving of heartiest praise. There is no disposition on the part of any to take from the mayor one iota of his deserts. For that matter, he is not one to hide his light under a bushel. What he does, has done or hopes to do is now shouted upon the house-tops by WNYC as well as placarded in the streets.

It would be interesting to know just when the parents passed judgment on the "Gary" system and why the mayor assumes that those who are demanding that we build more schools are guilty of "dishonest propaganda for political purposes" because they favor the Gary plan. This means fuller utilization of the school buildings. It has been their contention that fewer buildings might be adequate. And was it not the mayor who promised "a seat for every child"? That has not been secured, although the administration has made creditable progress.—The New York *Times.*

REPORTS

THE ANNUAL REPORT OF THE BRITISH BOARD OF EDUCATION

THE Report of the Board of Education for the Year 1922–23,[1] a volume of 177 pages and

[1] *Report of the Board of Education for the Year 1922–23.* Published 1924 by His Majesty's Stationery Office, Imperial House, Kingsway, London, W. C. 2. Price, 5 shillings net.

85,000 words, published this July, gives evidence of the recent "grave financial stress" in Great Britain, "following a remarkable expansion in public expenditure upon education." There is shown not only the postponement of contemplated programs of development but the strictest scrutiny of expenditures of the local education authorities. As a result the estimates of the board for 1923–24 amounted to £41,934,047, as compared with £45,275,000 for 1922–23.

An important factor in this reduction was the voluntary abatement by the teachers of 5 per cent. off their gross salaries on the Standard Scale from April, 1923, to March 31, 1924—an action which the Standing Joint Committee praised as "public spirited" and as "a substantial contribution to the financial necessities of the nation."

It is interesting to note the board's statement that it looks forward to "a resumption of steady progress in the future." Mr. Charles Trevelyan, president of the board, added recently at the Imperial Education Conference that "the relative lethargy and parsimony of the past few years has given place to a period of hope and rather larger generosity."

Salary Increases of Teachers

Illustrative of the expansion in public expenditure referred to is the increase in teachers' salaries which followed the introduction of the standard scale recommended by the Burnham Committee in 1918. Statistics are not given for secondary school teachers, but the report sets forth in detail figures for elementary school teachers.

For the total number of public elementary school teachers there was an increase in average salary of 158 per cent. from 1913–14 to 1922–23. Details follow: In 1914 the average salary of certificated teachers in public elementary schools maintained by local education authorities in England and Wales was £118. In 1920 it was £221; in 1921 it was £275; in 1922, £284; in 1923, £294. The figures for uncertificated teachers in the same years were £58, £123, £142, £146 and £151. For certificated head teachers (teachers "held responsible for the general control and supervision of the instruction and discipline of the school or department") the statistics for this period are: 1914, men £177, women £126; 1920, men £305, women £238; 1921, men £371, women £300; 1922, men £391, women £314; 1923, men £410, women £327. For certificated assistant teachers the figures are: 1914, men £129, women £96; 1920, men £249, women £189; 1921, men £304, women £238, 1922, men £305, women £246; 1923, men £310, women £254.

The number of teachers for every 1,000 pupils in average attendance increased from 30.4 in 1913–14 to 31.9 in 1921–22.

Progress in 1922–23

Although progress was restricted, the board reports that the educational record for 1922–23 was "not altogether a barren one." There was some expansion in the provision of secondary schools and schools for defective children, and in the grants available for adult education. Improvements in school premises were made by several local education authorities, who took advantage of the scheme of the late government for providing work for the unemployed.

The one legislative measure of the year accomplished by the board was the Education (Institution Children) Act, which adjusts as between different local education authorities the cost of educating children who are "in an area, but not of it."

By an act carried through the House of Commons by the president of the board, a commission was set up for the Universities of Oxford and Cambridge to make statutes and regulations for the universities in general accordance with the recommendations of the Royal Commission on those universities.

Certain changes in the regulations and code of the board are indicated in the paragraphs on the elementary schools.

Arrangements were begun with the Burnham Committee for the consideration of revised scales of teachers' salaries to come into operation when the present scales expire on March 31, 1925. Brief reports are given of the disputes between teachers and local education authorities at Croydon, Ossett, Gateshead and Lowestoft.

New stimulus was imparted during the year to the establishment of juvenile employment centers for children past the age of compulsory school attendance but unable to find employment.

The board's consultative committee is now at work on the reference, "What use can be made in the public system of education of psychological tests of educable capacity?" President Trevelyan has appointed a committee "to review arrangements for the training of teachers for public elementary schools."

THE BOARD'S INSPECTORATE IN ENGLAND

Nearly one fourth of the entire report of 177 large pages is devoted to an account of the origin and growth of the board's inspectorate in England.

It was the exploitation of child labor in factories and mines which led in 1802 to the first tentative effort at reform, the "Health and Morals of Apprentices Act." The first effective factory act was that of 1833. "So reluctant was the State of England to interfere with education (regarded as the concern of the churches) that no law dealing at all comprehensively with education was placed on the Statute Book until the School Board Act of 1870."

Beginning in 1839 with the creation of the Committee of the Privy Council on Education with Dr. Kay as secretary and the Reverend W. Allen and Mr. Tremenheere as the first inspectors of schools in England, the work went on with little support or sympathy until 1846, when an important advance took place. A system of training teachers was then introduced "on a plan which Dr. Kay and others had studied in Holland, although, from respect to insular prejudice, little was said of its origin."

By 1850 "twenty-three inspectors were engaged in the work, and Matthew Arnold was shortly to be added to their number." Then came the Revised Code of 1862 and the introduction of the Annual Examination, against which Arnold protested in his well-known report of 1863. For more than thirty years this change dominated English elementary education. "The annual examination was withdrawn by stages from 1895, and by the beginning of the present century a clean sweep had been made of the system introduced in 1862."

Of the succeeding era the report says: "The obligation to examine was removed, and no method was prescribed to replace it. A period followed of uncertain effort and doubtful aims."

By the Act of 1902, a system of administration by local education authorities was instituted. There are local inspectors, but there remains the province of the inspectors of the central authority, the Board of Education, "to supervise education over a wide area for the purpose, not merely of safeguarding the parliamentary grants, but of disseminating in convenient fashion results and suggestions derived from continuous recorded observations."

A presentation is then given of the aim, method and practice of inspectors which have gradually become established. The varied duties of elementary school inspectors are listed.

The report has paragraphs on the Woman Inspectorate (there are now 75 women inspectors under the Chief Woman Inspector), on the Technological and Art Branches, on the Secondary Branch and on the Medical Branch.

PUBLIC ELEMENTARY SCHOOLS

During the year there was a net decrease of 103 in the number of elementary public schools in England, reducing the total to 18,930 schools. In Wales the decrease was five, the total then being 1,901 schools.

The average attendance in elementary schools in England for 1922–23 was 4,735,928; the average number on registers is not yet available. In 1921–22 the percentage of average attendance to the average number on registers was 88.4. In Wales the 1922–23 average attendance was 405,533. The 1921–22 percentage of attendance in Wales was 86.4.

Tables of staffing in public elementary schools of England and Wales show that in 1921–22 the numbers were as follows: Certificated teachers, 118,026; uncertificated teachers, 34,848; supplementary teachers, 12,898. In 1913–14 similar figures were: Certificated teachers, 109,156; uncertificated, 41,407; supplementary, 13,367. The increase in the total number of teachers was from 163,930 in 1913–14 to 165,772 in 1921–22.

Of the certificated teachers in England the percentage of men having college training increased from 73.9 in 1913–14 to 77.8 in 1921–1922; college-trained women increased from 54 per cent. in 1913–14 to 65.4 per cent. in 1921–1922.

The main change introduced into the regulations of the board for elementary schools was a provision that "the head teacher should take a definite and substantial share in the actual instruction." The minimum indicated was "ten

lessons a week, that is, one lesson per session." Hereafter the appointment in urban areas of women teachers without academic attainments for children under six years will not be permitted.

PUBLIC SECONDARY SCHOOLS

The statistics of the report on secondary schools in England and Wales show a decline in admissions and at the same time an extension in "the length of school-life at these schools—both due in part to the prevailing industrial depression, but the latter due in part also to the stiffening of the conditions of admission."

In 1922–23 there were in England 1,450 secondary schools designated as efficient, having 200,198 boys and 185,317 girls, a total of 385,515. These figures include 82 preparatory schools having 7,164 pupils. At the beginning of 1923–24 there was an increase of eight schools and a decrease of 4,255 pupils. Wales had, in 1922–23, 150 efficient secondary schools with a total of 16,346 boys and 17,812 girls. The total decrease in attendance, as compared with 1921–22, was 551.

There were 16,906 teachers in the secondary schools of England, of whom 7,854, or 46.5 per cent., were men and 9,052, or 53.5 per cent., were women. The proportion of college graduates among the men increased from 72 per cent. in 1922 to 74.5 per cent. in 1923; and among the women from 54.5 per cent. in 1922 to 56.6 per cent. in 1923. In Wales the 1,579 teachers included 809 men, of whom 80.7 per cent. were college graduates, and 770 women, of whom 69.5 per cent. were graduates.

As to the size of classes, 3,229 were over the normal limit of 30 and 112 had over 35 pupils. There has been a steady increase in the number of schools and of pupils, both in England and in Wales, availing themselves of the first and second examinations instituted by the board in 1918.

GRANTS FOR EXPERIMENTAL WORK

Additional grants were made by the Board of Education to six schools where special or experimental work is being done: Perse School for Boys, Cambridge, where Latin and Greek are taught by the direct method; James Allen's Girls' School, Dulwich, where a botanical garden is utilized in the teaching of botany; Sexey's School, Somerset, Wedmore, where a special farm course is conducted; Burlington School, Westminster, which has a special one-year course in domestic subjects for girls of about 15 years; Mary Datchelor Girls' School, London, which offers a two-years' advanced course in music for girls who show musical ability; Ruabon County School, Wales, where experimental work is being done in the teaching of geography.

TECHNICAL COLLEGES

In the larger technical institutions of England there has been a decline in the number of students in all sections, due to earlier abnormal enrollment and to the present depressed condition of trade and industry. In 123 institutions there were 8,385 full-time students and 149,852 persons taking part-time vocational courses; to this total should be added 1,290 part-time students in courses specifically planned for persons engaged in teaching, and 1,651 students in courses of the day continuation school type.

Despite the industrial depression there has been an increase in the number of students in junior technical schools. The total enrollment in 86 such schools was 12,071 in 1922–23.

In Wales there has been a small increase in enrollment in technical colleges and in junior technical schools.

PART-TIME INSTRUCTION IN SCHOOLS

Part-time instruction of great variety was given at a total of 4,029 schools, under the direction of local education authorities, attended by 607,954 students (1921–22). Increases were recorded in courses for teachers (346 courses and some 29,000 students), and also in courses for adults organized by the Workers' Educational Association, or by university supervising bodies (338 courses and some 12,000 students).

COLLEGES AND SCHOOLS OF ART

There was a slight increase in attendance at the Royal College of Art, which in 1922–23 had 106 men and 96 women students. In 1921–22 the 198 schools of art of various types in England had 5,574 full-time students and 39,549 part-time students.

ADULT EDUCATION AND PUBLIC LIBRARIES

A marked increase of public interest in adult education was evident throughout England in 1922–23, in consequence of the activities of the Adult Education Committee, the British Insti-

tute of Adult Education, the Workers' Educational Association and other bodies. There was not as much activity in Wales, although the movement there is now spreading rapidly.

Twenty-two counties in England and Wales have taken advantage of the rural library scheme of the Carnegie United Kingdom Trust, receiving grants in aid of the capital expenditure incurred on their institution.

TRAINING OF TEACHERS

The 118 institutions recognized by the Board of Education as training colleges in 1922–23 included 17 university training departments having 4,877 students; 83 two-year training colleges having 12,531 students; 5 post-graduate colleges having 64 students, and 13 colleges for domestic subjects having 1,016 students.

Of the total of 18,504 students in training (including 16 following approved courses elsewhere than in training colleges), 16,818 were preparing for teaching in elementary schools, 670 were preparing for secondary schools and 1,016 were preparing to teach domestic subjects.

In anticipation of a continuing fall in the number of children in the schools, the board did not hold a certificate examination for acting teachers in November, 1923, and also requested training colleges to reduce the number of new admissions by not less than 5 per cent., as compared with normal admissions. This latter restriction has now been removed, and an examination for acting teachers will be held again in November, 1924.

Problems of training college finance have been serious. Local education authorities who provide colleges announced in April, 1923, that charges to students from areas in which no colleges were provided by the local authorities would have to be raised to the full cost of the education furnished. To relieve this situation, the government allowed £70,000 for 1923–24 and has extended this allowance for 1924–25. In addition to the grant of one half of the net expenditure of the college, the government is paying special grants at the following rates: £30 for each resident student from outside the local authority's area; £10 for each resident student from within the area; £12 for each day student from outside the area; £4 for each day student from within the area.

Eleven pages of the report are devoted to an account of ex-service men as teachers. The training colleges found the experiment less difficult than expected, because of the admirable spirit of the soldiers. In the final examination the ex-service students did well: "nearly all reached a standard justifying the award of a certificate."

Pupil-teacher centers are recognized in areas in England and Wales in which the Board of Education is "satisfied that there is a sufficient number of suitable candidates for the teaching profession for whose preliminary education adequate provision can not be made as ordinary pupils in secondary schools.

Pupil-teachers instructed in centers are required to continue their full-time education up to the age of sixteen years, and they then spend two years, from sixteen to eighteen, in part-time education combined with training as a pupil-teacher.

During 1922–23 there were 228 such pupil-teacher centers in England and 47 in Wales, having a total of 6,809 persons "recognized for the first time as pupil-teachers or student-teachers," of whom 1,226 were boys and 5,583 were girls.

During the summer holidays of 1923 the Board of Education provided 13 short courses for teachers in secondary schools at Oxford, Cambridge and other places. Two courses were arranged especially for Welsh teachers.

Separate chapters of the report are concerned with aid to students attending university institutions; the school medical service and allied activities; the Imperial Education Conference of 1923; the superannuation of teachers and the museums.

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EDUCATIONAL RESEARCH AND STATISTICS

DO ELEMENTARY SCHOOL PUPILS KNOW WHEN THEY MAKE MISTAKES IN SPELLING?

THE practical bearings of this question are obvious. If pupils know when they make mistakes in spelling, the problem of the teacher is to teach the pupils to use the dictionary and to exercise care in their work. On the other hand, if the pupils do not know when they make mistakes in spelling, the teacher has the more dif-

ficult task of developing a spelling consciousness.

In an effort to get the facts in the matter, the author prepared dictation exercises consisting of about 100 words, including 42 words of considerable spelling difficulty, and gave them to grades IV A, V A, VI and VIII of the Hart School, Stamford, Connecticut. The exercise used in grades IV A, VI and VIII is as follows:

1. The children are baking.
2. They like running and driving also.
3. The family is absent.
4. The factory belongs to the landlord.
5. The janitor is only forty years old.
6. He is stopping the quarrel.
7. The skin of the cherry is smooth and even.
8. There are plenty of violets in the forest.
9. Girls enjoy themselves tying them together.
10. They wither during the summer.
11. Don't go without getting a coat.
12. Dress properly and take an umbrella if it thunders.
13. The enemy is beginning to surround the tunnel.
14. The telegram came too late.
15. The arrest of the negro was cruel.
16. John's manner is neither splendid nor elegant.

After the exercise was dictated to the pupils, and before they had a chance for correction, the pupils were required to mark each written word as follows (V) if they were sure that the word was spelled correctly; (X) if they were sure that the word was spelled incorrectly; and (D) if they were doubtful about the spelling of the word.

The papers were then marked by the teachers. The results are given in the following table:

		Right Judged			Wrong Judged		
Grade	Pupils	Right	Wrong	Doubt	Wrong	Right	Doubt
IV A	26	1834	**8**	*51*	288	**239**	*184*
V A	29	2299	**6**	*63*	115	**186**	*177*
VI	31	2576	**10**	*85*	108	**185**	*138*
VIII	20	1860	**3**	*28*	34	**65**	*45*
Total	106	8569	**27**	*207*	545	**675**	*544*

The table shows the number of *right* words and *wrong* words that were judged to be *right*, *wrong*, or *doubtful*, for each grade, and the totals for all grades. Of the 8,803 words spelled *correctly*, 8,569 were judged *right*, 27 *wrong*, and 207 *doubtful*. Of the 1,764 words spelled *incorrectly*, 545 were judged *wrong*, 675 *right*, and 545 *doubtful*. (1) It is clear that the pupils know when they spelled *correctly*, since only 27 of the *right* words were called *wrong*. (2) It is clear also that the pupils were uncertain when they *misspelled* a word, since 675 of the 1,764 misspelled words were judged *right*, and 544 were judged *doubtful*. (3) A *doubtful* word is usually *wrong*. 544 of the 751 *doubtful* words were *wrong*.

In answer to the initial question we must conclude that the elementary school pupils examined frequently did not know when they made mistakes, and, further, that words about which they were doubtful were usually wrong. The conclusion in general is substantiated by Dr. Lull in a similar investigation.[1]

In interpreting the results we must remember that we are dealing with pupils who had received no instruction or training in judging their own work. Pupils may improve in the correctness of their judgments with instruction. Furthermore, the pupils of only a few grades were tested. It is quite possible, and even probable, however, that the pupils tested are fairly typical of pupils in general, and that most teachers have the same or quite similar problems.

How to meet the situation revealed is a matter of pure speculation. It would seem that three things are needed: (1) The development of a spelling consciousness, (2) to teach pupils to exercise care in spelling, to avoid careless errors, and (3) to train the pupils in using the dictionary, so that doubtful words may be looked up. Space does not permit the development of these suggestions. Pedagogical literature in spelling touches upon the topics. In addition to the reference given, the topics are discussed in some detail by the author in his "The Teaching of Spelling," chapter 6.

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[1] Lull, H. G., "A plan for developing a spelling consciousness," *Elementary School Journal*, Vol. XVIII, 1917, pp. 355–361.